

out of the five memoirs, only two are devoted solely to American biological subjects. Since all five are by well-known experts, the following brief remarks may in the main take the form of commendation rather than of criticism.

As regards No. 1, Mr. Ridgway is to be congratulated on having got through rather more than half his heavy task, the present part bringing him nearly to the conclusion of the perching birds, of which no less than 1675 species and races are recorded in the first four parts. As in the previous volumes, generic terms are employed in the modern restricted sense, and the "keys" to the various family and generic groups are all that can be desired in the way of lucidity and comprehensiveness.

The catalogue standing as No. 2 in our list is a work exclusively for the benefit of specialists, to whom it will no doubt prove invaluable. The invertebrates having been completed in the first part, the present issue is devoted to fossil vertebrates, fossil plants, and minerals, rocks, and ores, which are severally arranged in three main sections. In the vertebrate section the specimens are referred to their respective classes, in which they are catalogued according to the alphabetical order of their names. This seems, on the whole, the most satisfactory arrangement; but we venture to think that the author has carried the alphabetical plan a little too far in making it extend to the class-divisions, the sequence of birds, fishes, mammals, and reptiles being, in our opinion, decidedly unsatisfactory. The system of cross-references in cases where a specimen has been referred to more than one genus is well planned, but the addition of a species index to each section or class would have considerably added to the value of the catalogue as a work of reference.

With No. 3 we come to a work of prime importance, which cannot fail to be of the highest value to systematists. No complete revision of the families and genera of bats has, we believe, been published since the issue of Dobson's invaluable catalogue, and as great progress in our knowledge of the group has been made since that date, such a revision was urgently wanted. For this task few zoologists are better equipped than Mr. Miller, who for some years past has devoted much attention to the order, and has studied the chief collection on both sides of the Atlantic. Perhaps the most important divergences from the Dobsonian classification are the wide sundering of the Emballonuridae and Vespertilionidae, and the transference of the mastiff-bats from the former group to a separate family following the latter; the second change being a further development of one inaugurated by Winge and endorsed by Max Weber.

Dr. Stejneger's work on the reptiles of Japan, the Liu Kiu and neighbouring islands, and a considerable proportion of the mainland of the Far East, will take rank as a valuable systematic monograph, in which special attention is devoted to geographical distribution.

In his memoir on the Pacific diatoms collected by the *Albatross*, standing last on our list, the author directs attention to the importance of collecting these organisms on account of their value in determining difficult questions connected with the extent and volume of ocean currents, and the origin of the materials deposited on the bed of the sea. Now that this has been pointed out, there is little doubt that the authorities will see their way to the collection of diatoms in a much more careful and systematic manner than has hitherto been attempted in America.

R. L.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—The board of anthropological studies has put forward a proposal to establish a diploma in anthropology. The board believes that the interests of anthropology will be best served by the encouragement of research, and that the proposed diploma in anthropology should be granted for an original dissertation, and not by examination.

On the recommendation of the general board of studies the readership in animal morphology is to be transferred to the more general subject of zoology. It is proposed

NO. 1987, VOL. 77]

that the board be authorised to appoint a reader in zoology with the annual stipend of 100*l.*, to be paid from the common university fund. The board also proposes that a demonstrator in petrology be appointed.

Mr. W. Welsh has been appointed chairman of the examiners for part i. of the mathematical tripos, 1908 (new regulations).

Prof. Ridgway, the Disney professor, gives notice that he will maintain the thesis "that Sergi's theory of 'the Mediterranean race' is untenable," on Wednesday, December 4, at 5 p.m., in the archaeological lecture-room.

LONDON.—At the meeting of the Senate on November 20 a report was received from the committee specially appointed to advise the Senate on the question of the establishment of the proposed Institute of Medical Sciences at South Kensington. The committee found that the financial support offered for the original scheme was inadequate, and that, apart from the money difficulty, the scheme had become impracticable on account of the opposition of the medical faculty. The Senate therefore decided that the donors to the fund should be informed that the money paid was at their disposal.

Prof. Starling, F.R.S., has been elected by the medical faculty a member of the Senate, in succession to Dr. Lauriston Shaw, resigned.

MANCHESTER.—A deputation from the University, supported by the members of Parliament and municipal authorities of Lancashire and the surrounding counties, waited upon the Chancellor of the Exchequer on November 20 in reference to the proposed reduction of the Government grant to the University from 12,000*l.* to 10,000*l.* per annum. Throughout this district numerous public bodies interested in higher education have passed resolutions expressing disappointment at the recommendation of the advisory committee, and requesting the Government to continue its full support. The Vice-Chancellor gave evidence to show that this reduction in the grant will seriously hamper the steps which have been taken to develop in various directions the higher branches of the work of the University. The Chancellor of the Exchequer emphasised the determination of the Government not to reduce the total grant of 100,000*l.* devoted to higher education, but, whilst admitting that there was no suggestion that the work of the University had been slackened in any of its departments, pointed out that the advisory committee was unbiased and free from pressure from any quarter. Further consideration of the case was promised. Quite apart from its local effect, the "principle of a maximum" is regarded here as one of great danger to the advance of higher education. The *Manchester Guardian* remarks:—"In our own opinion the committee has not only incidentally done serious damage to the University, but it has done violence to a principle much more important than the one it has introduced. That principle is, that while there are many valid reasons why the amount spent by the State on educational institutions should be increased, there is only one valid reason for its ever being reduced—their inefficiency. It is right to penalise a college or a school because it does not come up to standard, but it is contrary to justice and to public policy to penalise one of which nothing but praise is uttered."

OXFORD.—A grant of 300*l.* having been made from the University chest to the professor of pathology for the provision of a lecturer and a demonstrator in his department, the professor has nominated Dr. E. W. Ainley Walker as lecturer in pathology.

SHEFFIELD.—Mr. Haldane visited the University on November 20, and inspected various departments and addressed a large gathering of the students, staff, and others, presided over by Sir Charles Eliot, the Vice-Chancellor. Mr. Haldane spoke of the developments of recent times which have brought universities into contact with industrial life. The closest connection of science and industry may be made to the lasting advantage of both, and without damage to either. It is becoming truer every day that no man can hope to control a great university who has not at his disposal resources which science alone can give. The laboratory and the professor have inspired

some of the greatest industrial movements of the time, and all indications are that that will continue to be so more and more. It is sometimes said that the only source of wealth is labour. This was true in old days, when science was little applied to industry, and there were capitalists and labourers and little else, but conditions have since then been changed. There is an abundance of labour, but also a greater abundance of capital. It is becoming apparent that labour undirected, labour without knowledge and without scientific ability to direct it, is incapable of serving the purpose of those who wish to develop the resources of nature. The real source of wealth is the direction of labour and capital to the right points of application. Knowledge is the source of wealth—scientific knowledge, business knowledge—the capacity of the trained man; and the men with that capacity, the men of brain and of science, are emerging more and more as those who have the power of controlling the resources of the earth, and labour and capital are becoming more and more instruments in their hands.

GIFTS and legacies to the funds of Yale University amounted to more than 100,000*l.* during the fiscal year recently completed. Gifts amounting to 70,000*l.* were received by the New York University during the past fiscal year. The value of this University's property is more than 1,000,000*l.*

PROF. BEDSON last June completed his twenty-fifth year as professor of chemistry at the Armstrong College, Newcastle-upon-Tyne. The event was the occasion of many congratulations and suitable presentations. In addition to the celebration arranged last summer, we notice from the report of the principal of the college that the council has "deemed it only fitting to mark the occasion, and its profound appreciation of Prof. Bedson's exceptional services to the college, by unanimously voting him a 'jubilee' vacation of six months, to take effect in the course of the coming year, together with a sum of 200*l.*" We congratulate Prof. Bedson, and commend the course of action adopted by the Newcastle authorities to the notice of other college councils.

THE fifth annual report of the Manchester Education Committee deals with the year 1906-7, and provides much information concerning the successful attempts made in the city to coordinate educational effort and to prevent overlapping and waste. Full particulars are given as to the work during the session of the Municipal School of Technology. There was for some reason a decrease of 164 in the total number of individual day and evening students enrolled, which, however, reached 5149. The total volume of work of the evening departments, computed in student hours, that is, by multiplying the number of students enrolled by the total number of hours of instruction, was 444,827 student hours, whilst the actual volume of work namely, the total number of hours of instruction multiplied by the actual attendances, was 290,046, or 65 per cent. of the total volume of work.

THE inaugural address delivered by Prof. Willis G. Tucker at the opening of the present session of the Albany Medical College has been reprinted from the Albany Medical Annals of the present month. The address dealt with educational democracy, and in it Prof. Tucker indicated several directions in which, unless care is taken, danger may result to American higher education from the large private benefactions of recent years. Quoting from a speech of Chancellor MacCracken at New York University, Prof. Tucker urged that, as a result of the gifts of millions of dollars from great American financiers, the universities are in danger of being reckoned the purchased servants of a narrow caste. He went on to insist that in a country like the United States "higher education should be in no way dependent upon the variable and perhaps ill-directed impulses of individuals, however generous and philanthropic they may be." He maintained that it is the duty of the State to provide technical and higher education for the people, enumerated the reasons for his belief, and indicated some of the directions in which he thought the necessary funds might be raised.

THE report of the council of University College, Bristol, presented to the governors at their annual meeting on November 20, is a record of steady progress as regards number of students and results of original investigations. For a college with limited means and indifferent local support, the amount of research carried on is particularly noteworthy. A department in economic biology has been formed with the object of rendering assistance to those engaged in agriculture and kindred pursuits. By carrying out investigations and experiments, and by suggesting preventive or remedial measures where crops and fruit trees have been threatened or attacked by insect or other pests, it is hoped that the department will meet a real need. The committee of the Bristol Museum has consented to form collections illustrative of economic biology. Though the college is a centre of intellectual life and interest in the city of Bristol and neighbourhood, it derives only a meagre income of about 500*l.* a year from the sustentation fund. If this may be taken as an index of public support to higher education in the west of England, the prospects of a university do not seem very promising. It is hoped, however, that the King will visit the city to open the Avonmouth Docks next year, and that the promoters of the scheme for a university will be justified by that time in asking for a charter.

THE report for the session 1906-7 of the department of technology of the City and Guilds of London Institute has now been published. During the session, 3311 classes in technological subjects were registered at 376 centres, in 286 towns. These classes were attended by 46,048 students, being 1580 more than in 1905-6; 21,728 candidates were presented in technology from 439 centres in the United Kingdom, and of these 13,054 passed. By including the candidates from India and the colonies, and those for teachers' certificates in manual training and domestic economy, the total number of examinees was 23,572. These figures show an increase on those of any previous year. Members of the institute's staff for the examination, inspection, or organisation of classes visited ninety-two centres during the year. The report points out two main causes which impede progress in the technical instruction of artisans and prevent the results of the teaching from being as satisfactory as might be desired. They are, first, the difficulty of finding competent teachers, and, secondly, the unduly large proportion of artisan students who enter technical classes without the preliminary knowledge necessary to take full advantage of the instruction they receive. It is fully recognised in the report that the teaching of technology has improved greatly during the past decade, but it is noted that the examiners have still to direct attention repeatedly to the insufficient knowledge that candidates possess of the principles of the subjects, and to point out that the fluctuating quality of answers in different groups of papers indicates faulty teaching as the source. As regards the preliminary training of the students, it is desirable, the report says, that more encouragement should be given to the further attendance of pupils at a school in which provision is made for manual training, English, and practical science teaching, before commencing the distinctly technical part of their course of training.

SOCIETIES AND ACADEMIES.

LONDON.

Chemical Society, November 7.—Sir William Ramsay, K.C.B., F.R.S., president, in the chair.—Gaseous nitrogen trioxide: H. B. **Baker** and Mrs. **Baker**. Liquid nitrogen trioxide can be converted into the gaseous state if it is dried completely. The liquid is green at the ordinary temperature, but becomes blue below -2° . In liquid air it solidifies to a mass of dark blue crystals.—The atomic weight of tellurium: H. B. **Baker** and A. H. **Bennett**. During the last thirteen years the authors have investigated tellurium, and the possibility of its containing a second element, but so far all the evidence obtained points to the homogeneity of the element.—The isomerism of the double sulphites of sodium and potassium: M. H. **Godby**. No evidence of the existence of the two isomeric salts $\text{KO} \cdot \text{SO}_2 \cdot \text{Na}$ and $\text{NaO} \cdot \text{SO}_2 \cdot \text{K}$ could be obtained.—Studies